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(58) Field of search

E1C

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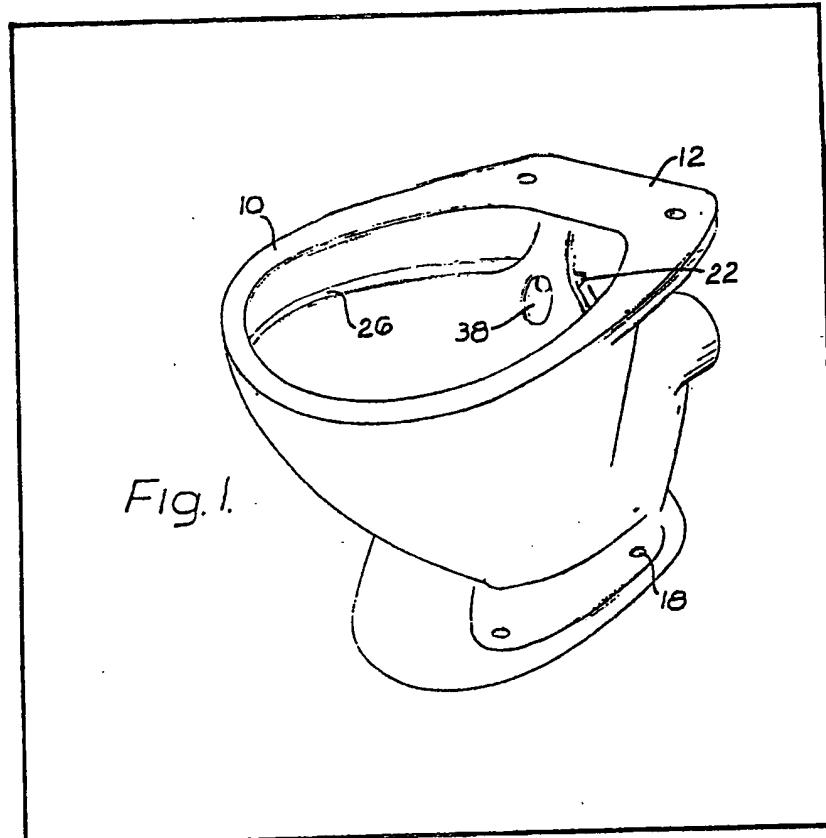
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(54) Water Closet Pan

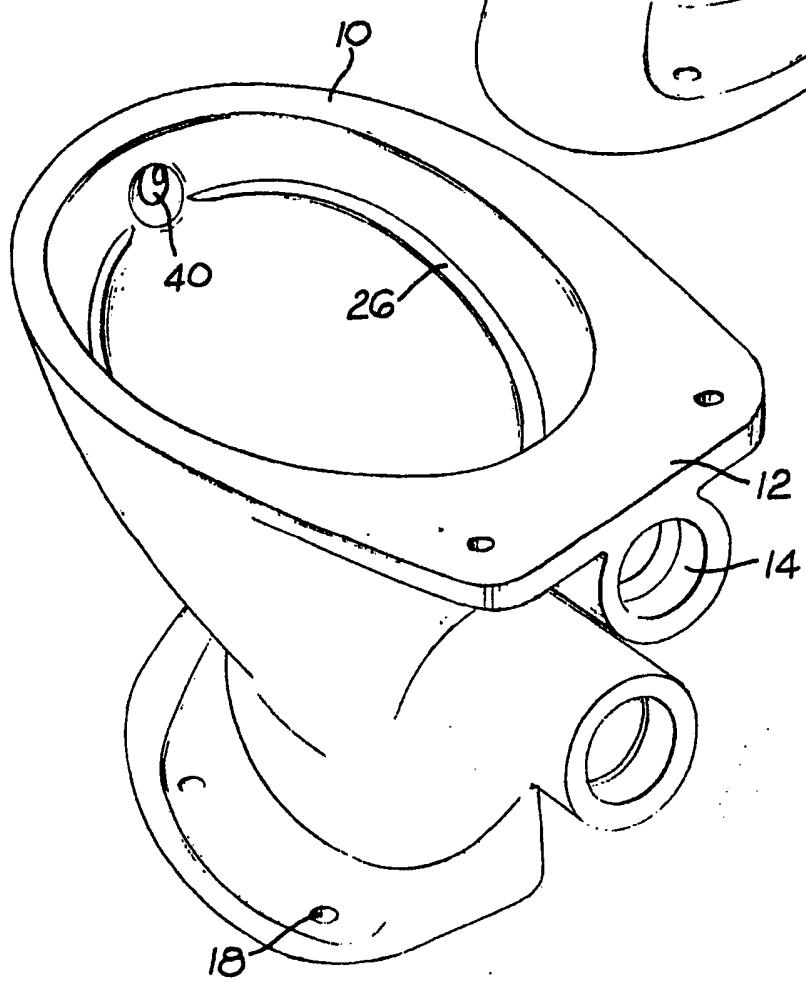
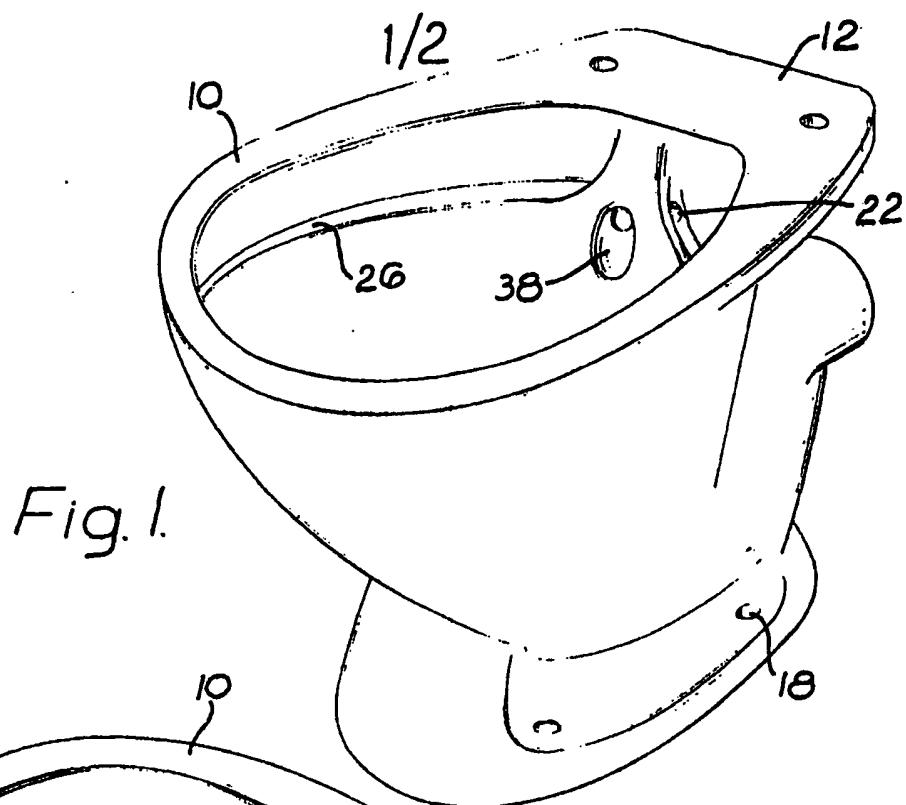
(57) A W. C. pan has no internal projection into the bowl at the rim so that a mould core forming the bowl interior may be lifted out in one piece. Washdown of the bowl walls is effected water from apertures 22 directed around the rim in oppositely

directed streams which are guided by step-like shoulders 26 on the bowl and the water overflows those shoulders for washdown purposes. The pan contents are cleared by downwardly-directed water jets from front and rear apertures 38. The pan rim is hollow, Figure 4 (not shown) to provide waterway (18).



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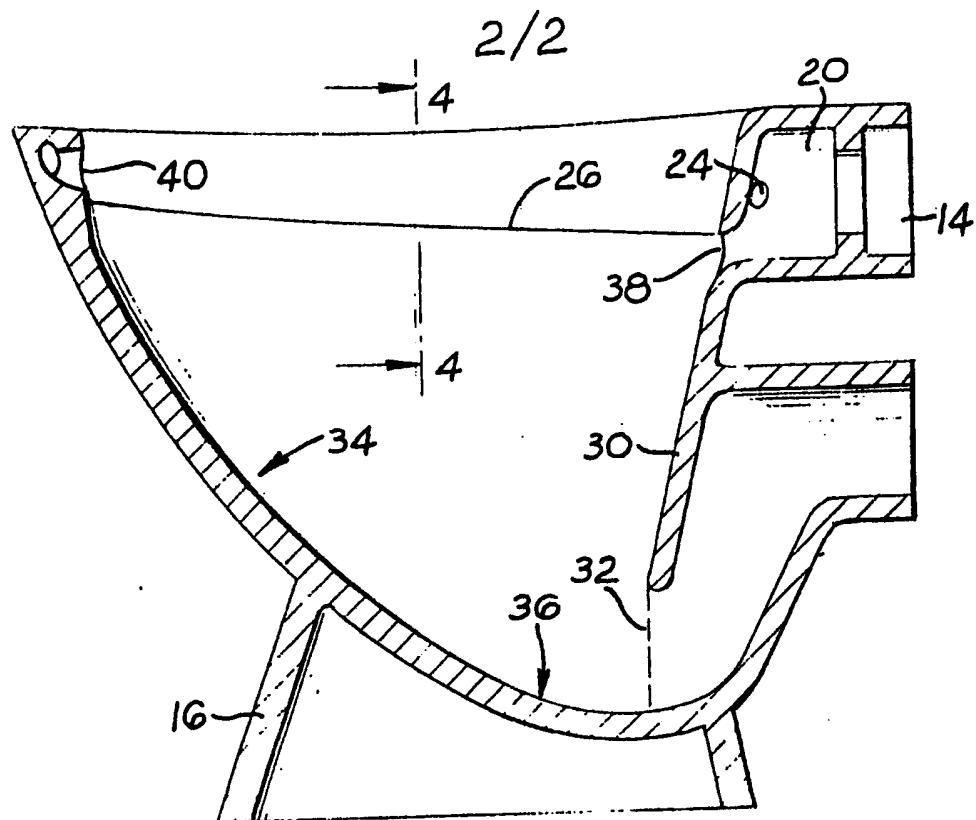


Fig. 3.

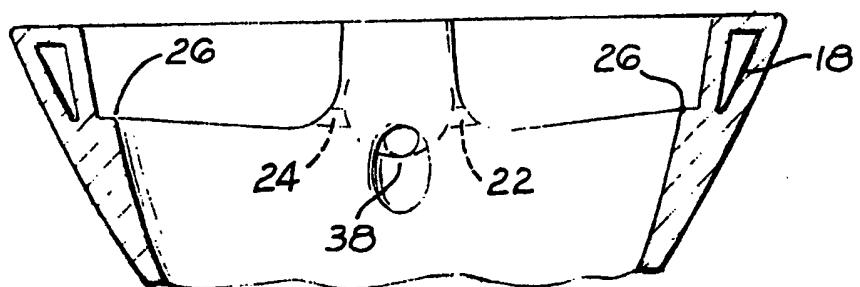


Fig. 4

SPECIFICATION

Improvements Relating to Flushing W.C. Pans

This invention relates to flushing water closet pans.

5 The conventional pan in use at the present time has the flushing water delivered to the interior of the pan at the top and rear of the same. The water is required to perform two functions, namely wash down of the interior face of the bowl 10 portion and displacement of the foul water from the sump of the pan via the trappage. Wash down is effected by channelling a proportion of the water around a hollow rim from which it is discharged via a continuous narrow slot or via a 15 series of spaced ports opening to the top of the bowl around its periphery, possibly with larger volumes directed downwardly at front and rear faces of the bowl due to large ports at those locations. The rim portion containing the 20 waterway is therefore made either as a separate hollow box-like portion added to the bowl in manufacture, or as an integral part made in the manufacture, and in either case projects internally so as to overhang the top of the bowl around the 25 whole or part periphery of the same.

The two-stage manufacture, that is making a separate rim and adding it to the bowl has obvious disadvantages, and the one-stage manufacture necessitates mould pieces to define 30 the internal shape of the bowl, which pieces can be taken out one by one, with risk of seam lines calling for subsequent finishing operations.

The object of the invention is to provide an improved pan capable of simple manufacture and 35 of leading to an inherently smooth internal contour with a minimum of finishing operations.

In accordance with the invention broadly, a flushing W.C. pan is characterised by a total absence of internal projections at its rim about its 40 whole periphery so that the internal dimensions of the bowl are maximum at the rim.

Preferably, the rim of the pan is made as a hollow waterway, and there are at least two apertures opening to that waterway, namely a 45 first aperture which may be at the rear to project water around the bowl near to the rim, for washdown, and a second aperture which may be at the front to direct water to the sump for displacement.

50 It is preferred to provide two apertures at the rear of the pan opening so as to direct the washdown water in streams in opposite directions, so that each stream flows along substantially one half of the total periphery of the 55 rim whilst the further aperture provides the displacement water.

In a preferred version the waterway has four apertures, namely the two for oppositely directed washdown streams, and one at each of the front 60 and rear for displacement water.

The washdown streams may be guided and maintained so that they are retained substantially at a constant level near to the rim by a step-like shoulder or shoulders extending around the bowl,

65 and these may diminish in effect along their length, for example by having a continuously reducing width; water will flow along these guide shoulders but overflow from them for washdown purposes.

70 The division of the total water supply into the various streams and jets may be effected wholly by passages provided in the body of the pan, or alternatively a separate spreader fitting may be used to provide at least the washdown streams 75 and possibly also the displacement stream at the rear of the pan adjacent to the water inlet.

One presently preferred embodiment of the invention is now more particularly described by way of example only and with reference to the 80 accompanying drawings wherein:—

Figure 1 is a perspective view from the front showing a flushing W.C. pan;

Figure 2 is a similar perspective view from the rear of the same;

85 Figure 3 is a sectional side elevation; and Figure 4 is a fragmentary sectional view taken on the line 4—4 of Figure 3.

Referring now to the drawings, the pan is made in one piece by slip casting from ceramic material.

90 The rim of the pan, 10 is formed with a rearward projection 12 to provide mounting points for a seat in conventional manner. The cistern used with the pan may be close coupled, that is mounted directly on the pan, although in the 95 illustrated embodiment it is intended that the cistern shall be spaced from the pan, with flushing water directed via a supply pipe coupled to the aperture 14.

The pan is formed with a conventional foot 16 100 having apertures 18 for fixing screws, and it will be appreciated by those skilled in the art that the apertures 18 may be formed by cores in a slip casting operation.

As best seen from Figures 3 and 4, the pan has 105 no internal projection at the rim, and decreases in all dimensions from the rim downwardly.

As best seen in Figure 4, the rim comprises a hollow section to provide a waterway 18 which extends around the whole periphery of the rim, a 110 portion of that waterway being enlarged as a chamber at 20 (Figure 3) connected directly to the inlet 14. This waterway 18 may be formed in the slip casting operation without the use of cores, by running off surplus slip after the walls of 115 the waterway have formed.

The waterway 18 is subsequently formed with a pair of oppositely directed washdown jet apertures 22, 24 which open adjacent the rim at the rear of the pan. These apertures 22, 24 are 120 located substantially at the level of a step or shoulder 26 which extends substantially around the whole periphery of the bowl and which decreases in width towards the front of the bowl.

As best seen from Figure 4, the step or shoulder 125 its If does not lead to any internal projection into the bowl, in the sense that an internal rear mould part forming (possibly) the whole of the interior shape as seen in Figure 4 can be lifted out in one piece without any projection to act as an

obstacle. This mould or core projection may not only form the rear wall 30 of the bowl but continue generally along the dotted line 32 Figure 3 so that it forms the whole of the front face 34 5 and a major portion of the sump 36, the mould or core piece being treated, for example to reduce absorbency over the area represented by the broken line 32 so that a relatively thin web is formed there, which can be subsequently cut 10 away in a finishing operation.

The rear aperture 38 and the front aperture 40 can be punched into the waterway as part of the same finishing operation.

Instead of forming the, or all of the waterways 15 in the ceramic ware, a separate part may be inserted into the port 38 to divide and distribute the water in like manner.

The particularly smooth and simple lines of the 20 interior of the bowl minimise the build up of hard water deposits and the like, and make the pan of the invention simple to clean.

Claims

1. A flushing W.C. pan characterised by a total absence of internal projections at its rim about its 25 whole periphery, so that the internal dimensions of the bowl are maximum at the rim.

2. A pan as claimed in Claim 1 wherein the rim

of the pan is a hollow waterway and there are at least two apertures opening to that waterway, 30 namely one disposed to project water around the bowl near to the rim for washdown, and a second to direct water to the sump for displacement.

3. A pan as claimed in Claim 2 wherein the washdown aperture is at the rear of the pan and the displacement aperture is at the front of the pan.

4. A pan as claimed in Claims 2 and 3 wherein a pair of washdown apertures are provided to project streams of water in opposite directions.

40 5. A pan as claimed in Claims 1 to 4 wherein four apertures are provided, namely two for oppositely directed streams of water for washdown from the rim of the pan, and one each at the front and rear of the pan primarily for displacement water.

6. A pan as claimed in any of Claims 2 to 5 wherein a step-like shoulder or shoulders extend around the bowl adjacent to the rim for directing the washdown stream or streams so as to

50 maintain the same over substantially the whole of the periphery of the bowl.

7. A pan as claimed in any of Claims 2 to 5 or 6 wherein the washdown stream or streams are directed by a separate spreader inserted into a 55 waterway aperture.